



Serial No 10-774,721.txt
SEQUENCE LISTING

<110> JOCKERS, Ralf
COUTURIER, Cyril
UHLMANN, Eugen

<120> OB RGRP

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<140> 10/774,721

<141> 2004-02-09

<150> 60/461,005

<151> 2003-04-07

<150> 0301543

<151> 2003-02-10

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<170> PatentIn version 3.1

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Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val
20 25 30
tac tgg ccc tta ttc gtc ctg att ttc cac gcc atc tcc ccc atc ccc 144
Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro

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35	40	45	
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gcc ttt gga ttt cct gtt att ctt gct cgt gtg gct gtg atc aaa tgg Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp 85 90 95			288
gga gcc tgc ggc ctt gtg ttg gca ggc aat gca gtc att ttc ctt aca Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr 100 105 110			336
att caa ggg ttt ttc ctt ata ttt gga aga gga gat gat ttt agc tgg Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp 115 120 125			384
gag cag tgg tag Glu Gln Trp 130			396

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Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro 35 40 45
His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser 50 55 60
Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser 65 70 75 80
Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp 85 90 95

Serial No 10-774,721.txt
Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr
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Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val
20 25 30

tac tgg ccc tta ttc gtc ctg att ttc cac gcc atc tcc ccc atc ccc 144
Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro
35 40 45

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His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser
50 55 60

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Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser

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att Ile	caa Gln	ggg Gly 115	ttt Phe	ttc Phe	ctt Leu	ata Ile	ttt Phe 120	gga Gly	aga Arg	gga Gly	gat Asp	gat Asp 125	ttt Phe	agc Ser	tgg Trp	384
gag Glu	cag Gln 130	tgg Trp	att Ile	ccg Pro	ggg Gly	gat Asp 135	cca Pro	ccg Pro	gct Ala	aga Arg	gcc Ala 140	acc Thr	atg Met	acc Thr	agc Ser	432
aag Lys 145	gtg Val	tac Tyr	gac Asp	ccc Pro	gag Glu 150	cag Gln	agg Arg	aag Lys	agg Arg	atg Met 155	atc Ile	acc Thr	ggc Gly	ccc Pro	cag Gln 160	480
tgg Trp	tgg Trp	gcc Ala	agg Arg	tgc Cys 165	aag Lys	cag Gln	atg Met	aac Asn	gtg Val 170	ctg Leu	gac Asp	agc Ser	ttc Phe 175	atc Ile 175	aac Asn	528
tac Tyr	tac Tyr	gac Asp	agc Ser 180	gag Glu	aag Lys	cac His	gcc Ala	gag Glu 185	aac Asn	gcc Ala	gtg Val	atc Ile	ttc Phe 190	ctg Leu	cac His	576
ggc Gly	aac Asn	gcc Ala 195	gct Ala	agc Ser	agc Ser	tac Tyr	ctg Leu 200	tgg Trp	agg Arg	cac His	gtg Val	gtg Val 205	ccc Pro	cac His	atc Ile	624
gag Glu	ccc Pro 210	gtg Val	gcc Ala	agg Arg	tgc Cys	atc Ile 215	atc Ile	ccc Pro	gat Asp	ctg Leu	atc Ile 220	ggc Gly	atg Met	ggc Gly	aag Lys	672
agc Ser 225	ggc Gly	aag Lys	agc Ser	ggc Gly	aac Asn 230	ggc Gly	agc Ser	tac Tyr	agg Arg	ctg Leu 235	ctg Leu	gac Asp	cac His	tac Tyr	aag Lys 240	720
tac Tyr	ctg Leu	acc Thr	gcc Ala	tgg Trp 245	ttc Phe	gag Glu	ctc Leu	ctg Leu	aac Asn 250	ctg Leu	ccc Pro	aag Lys	aag Lys	atc Ile 255	atc Ile	768
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gag Glu	cac His	cag Gln 275	gac Asp	aag Lys	atc Ile	aag Lys	gcc Ala 280	atc Ile	gtg Val	cac His	gcc Ala	gag Glu 285	agc Ser	gtg Val	gtg Val	864
gac Asp	gtg Val 290	atc Ile	gag Glu	agc Ser	tgg Trp	gac Asp 295	gag Glu	tgg Trp	cca Pro	gac Asp	atc Ile 300	gag Glu	gag Glu	gac Asp	atc Ile	912
gcc Ala 305	ctg Leu	atc Ile	aag Lys	agc Ser	gag Glu 310	gag Glu	ggc Gly	gag Glu	aag Lys	atg Met 315	gtg Val	ctg Leu	gag Glu	aac Asn	aac Asn 320	960
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Pro	Glu	Glu	Phe	Ala	Ala	Tyr	Leu	Glu	Pro	Phe	Lys	Glu	Lys	Gly	Glu	
			340					345					350			
gtg	aga	aga	ccc	acc	ctg	agc	tgg	ccc	aga	gag	atc	ccc	ctg	gtg	aag	1104
Val	Arg	Arg	Pro	Thr	Leu	Ser	Trp	Pro	Arg	Glu	Ile	Pro	Leu	Val	Lys	
			355				360					365				
ggc	ggc	aag	ccc	gac	gtg	gtg	cag	atc	gtg	aga	aac	tac	aac	gcc	tac	1152
Gly	Gly	Lys	Pro	Asp	Val	Val	Gln	Ile	Val	Arg	Asn	Tyr	Asn	Ala	Tyr	
			370			375					380					
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Leu	Arg	Ala	Ser	Asp	Asp	Leu	Pro	Lys	Met	Phe	Ile	Glu	Ser	Asp	Pro	
					390					395					400	
ggc	ttc	ttc	agc	aac	gcc	atc	gtg	gag	ggc	gcc	aag	aag	ttc	ccc	aac	1248
Gly	Phe	Phe	Ser	Asn	Ala	Ile	Val	Glu	Gly	Ala	Lys	Lys	Phe	Pro	Asn	
				405				410						415		
acc	gag	ttc	gtg	aag	gtg	aag	ggc	ctg	cac	ttc	agc	cag	gag	gac	gcc	1296
Thr	Glu	Phe	Val	Lys	Val	Lys	Gly	Leu	His	Phe	Ser	Gln	Glu	Asp	Ala	
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ccc	gac	gag	atg	ggc	aag	tac	atc	aag	agc	ttc	gtg	gag	aga	gtg	ctg	1344
Pro	Asp	Glu	Met	Gly	Lys	Tyr	Ile	Lys	Ser	Phe	Val	Glu	Arg	Val	Leu	
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Page 6															

20

Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro
35 40 45

His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser
50 55 60

Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser
65 70 75 80

Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp
85 90 95

Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr
100 105 110

Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp
115 120 125

Glu Gln Trp Ile Pro Gly Asp Pro Pro Ala Arg Ala Thr Met Thr Ser
130 135 140

Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln
145 150 155 160

Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn
165 170 175

Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His
180 185 190

Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile
195 200 205

Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys
210 215 220

Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys
225 230 235 240

Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile
245 250 255

Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser Tyr
260 265 270

Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val
275 280 285

Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile
290 295 300

Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn
305 310 315 320

Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu
325 330 335

Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu
340 345 350

Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys
355 360 365

Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr
370 375 380

Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro
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Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn
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Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala
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Tyr	Trp	Pro	Leu	Phe	Val	Leu	Ile	Phe	His	Ala	Ile	Ser	Pro	Ile	Pro	
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65					70				75						80	

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Gly	Ala	Cys	Gly	Leu	Val	Leu	Ala	Gly	Asn	Ala	Val	Ile	Phe	Leu	Thr	
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		115					120					125				

gag	cag	tgg	att	ccg	gtc	gcc	acc	atg	gtg	agc	aag	ggc	gag	gag	ctg	432
Glu	Gln	Trp	Ile	Pro	Val	Ala	Thr	Met	Val	Ser	Lys	Gly	Glu	Glu	Leu	
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Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	
145					150					155					160	

ggc	cac	aag	ttc	agc	gtg	tcc	ggc	gag	ggc	gag	ggc	gat	gcc	acc	tac	528
Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	
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ggc	aag	ctg	acc	ctg	aag	ttc	atc	tgc	acc	acc	ggc	aag	ctg	ccc	gtg	576

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Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Phe	Gly	Tyr	Gly	Val	Gln	Cys	Phe	
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gcc	cgc	tac	ccc	gac	cac	atg	cgc	cag	cac	gac	ttc	ttc	aag	tcc	gcc	672
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225					230					235					240	
ggc	aac	tac	aag	acc	cgc	gcc	gag	gtg	aag	ttc	gag	ggc	gac	acc	ctg	768
Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	
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gtg	aac	cgc	atc	gag	ctg	aag	ggc	atc	gac	ttc	aag	gag	gac	ggc	aac	816
Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	
			260					265					270			
atc	ctg	ggg	cac	aag	ctg	gag	tac	aac	tac	aac	agc	cac	aac	gtc	tat	864
Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	
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Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	
	290					295					300					
cgc	cac	aac	atc	gag	gac	ggc	agc	gtg	cag	ctc	gcc	gac	cac	tac	cag	960
Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	
305					310					315					320	
cag	aac	acc	ccc	atc	ggc	gac	ggc	ccc	gtg	ctg	ctg	ccc	gac	aac	cac	1008
Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	
				325					330					335		
tac	ctg	agc	tac	cag	tcc	gcc	ctg	agc	aaa	gac	ccc	aac	gag	aag	cgc	1056
Tyr	Leu	Ser	Tyr	Gln	Ser	Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	
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gat	cac	atg	gtc	ctg	ctg	gag	ttc	gtg	acc	gcc	gcc	ggg	atc	act	ctc	1104
Asp	His	Met	Val	Leu	Leu	Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	
		355					360					365				
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35 40 45

His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser
50 55 60

Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser
65 70 75 80

Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp
85 90 95

Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr
100 105 110

Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp
115 120 125

Glu Gln Trp Ile Pro Val Ala Thr Met Val Ser Lys Gly Glu Glu Leu
130 135 140

Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn
145 150 155 160

Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr
165 170 175

Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val
180 185 190

Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln Cys Phe
195 200 205

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Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys Ser Ala
210 215 220

Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp
225 230 235 240

Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu
245 250 255

Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn
260 265 270

Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr
275 280 285

Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile
290 295 300

Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln
305 310 315 320

Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His
325 330 335

Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg
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Serial No 10-774,721.txt

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Tyr	Val	Ile	Thr	Ala	Phe	Asn	Leu	Ser	Tyr	Pro	Ile	Thr	Pro	Trp	Arg			
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Phe	Lys	Leu	Ser	Cys	Met	Pro	Pro	Asn	Ser	Thr	Tyr	Asp	Tyr	Phe	Leu			
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ttg	cct	gct	gga	ctc	tca	aag	aat	act	tca	aat	tcg	aat	gga	cat	tat			192
Leu	Pro	Ala	Gly	Leu	Ser	Lys	Asn	Thr	Ser	Asn	Ser	Asn	Gly	His	Tyr			
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gag	aca	gct	ggt	gaa	cct	aag	ttt	aat	tca	agt	ggt	act	cac	ttt	tct			240
Glu	Thr	Ala	Val	Glu	Pro	Lys	Phe	Asn	Ser	Ser	Gly	Thr	His	Phe	Ser			
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Asn	Leu	Ser	Lys	Thr	Thr	Phe	His	Cys	Cys	Phe	Arg	Ser	Glu	Gln	Asp			
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aga	aac	tgc	tcc	tta	tgt	gca	gac	aac	att	gaa	gga	aag	aca	ttt	ggt			336
Arg	Asn	Cys	Ser	Leu	Cys	Ala	Asp	Asn	Ile	Glu	Gly	Lys	Thr	Phe	Val			
			100					105					110					
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Ser	Thr	Val	Asn	Ser	Leu	Val	Phe	Gln	Gln	Ile	Asp	Ala	Asn	Trp	Asn			
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Ile	Gln	Cys	Trp	Leu	Lys	Gly	Asp	Leu	Lys	Leu	Phe	Ile	Cys	Tyr	Val			
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Glu	Ser	Leu	Phe	Lys	Asn	Leu	Phe	Arg	Asn	Tyr	Asn	Tyr	Lys	Val	His			
145					150					155				160				
ctt	tta	tat	ggt	ctg	cct	gaa	gtg	tta	gaa	gat	tca	cct	ctg	ggt	ccc			528
Leu	Leu	Tyr	Val	Leu	Pro	Glu	Val	Leu	Glu	Asp	Ser	Pro	Leu	Val	Pro			
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caa	aaa	ggc	agt	ttt	cag	atg	ggt	cac	tgc	aat	tgc	agt	ggt	cat	gaa			576
Gln	Lys	Gly	Ser	Phe	Gln	Met	Val	His	Cys	Asn	Cys	Ser	Val	His	Glu			
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Cys	Cys	Glu	Cys	Leu	Val	Pro	Val	Pro	Thr	Ala	Lys	Leu	Asn	Asp	Thr			
		195					200					205						
ctc	ctt	atg	tgt	ttg	aaa	atc	aca	tct	ggt	gga	gta	att	ttc	cag	tca			672
Leu	Leu	Met	Cys	Leu	Lys	Ile	Thr	Ser	Gly	Gly	Val	Ile	Phe	Gln	Ser			
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cct	cta	atg	tca	ggt	cag	ccc	ata	aat	atg	gtg	aag	cct	gat	cca	cca			720
Pro	Leu	Met	Ser	Val	Gln	Pro	Ile	Asn	Met	Val	Lys	Pro	Asp	Pro	Pro			
225					230					235				240				
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Trp	Ser	Ser	Pro	Pro	Leu	Val	Pro	Phe	Pro	Leu	Gln	Tyr	Gln	Val	Lys	
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Ser	Ala	Thr	Ser	Leu	Leu	Val	Asp	Ser	Ile	Leu	Pro	Gly	Ser	Ser	Tyr	
	290					295					300					
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Glu	Val	Gln	Val	Arg	Gly	Lys	Arg	Leu	Asp	Gly	Pro	Gly	Ile	Trp	Ser	
305					310					315					320	
gac	tgg	agt	act	cct	cgt	gtc	ttt	acc	aca	caa	gat	gtc	ata	tac	ttt	1008
Asp	Trp	Ser	Thr	Pro	Arg	Val	Phe	Thr	Thr	Gln	Asp	Val	Ile	Tyr	Phe	
				325					330					335		
cca	cct	aaa	att	ctg	aca	agt	gtt	ggg	tct	aat	gtt	tct	ttt	cac	tgc	1056
Pro	Pro	Lys	Ile	Leu	Thr	Ser	Val	Gly	Ser	Asn	Val	Ser	Phe	His	Cys	
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Ile	Tyr	Lys	Lys	Glu	Asn	Lys	Ile	Val	Pro	Ser	Lys	Glu	Ile	Val	Trp	
		355					360					365				
tgg	atg	aat	tta	gct	gag	aaa	att	cct	caa	agc	cag	tat	gat	gtt	gtg	1152
Trp	Met	Asn	Leu	Ala	Glu	Lys	Ile	Pro	Gln	Ser	Gln	Tyr	Asp	Val	Val	
	370					375					380					
agt	gat	cat	gtt	agc	aaa	gtt	act	ttt	ttc	aat	ctg	aat	gaa	acc	aaa	1200
Ser	Asp	His	Val	Ser	Lys	Val	Thr	Phe	Phe	Asn	Leu	Asn	Glu	Thr	Lys	
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Pro	Arg	Gly	Lys	Phe	Thr	Tyr	Asp	Ala	Val	Tyr	Cys	Cys	Asn	Glu	His	
				405				410						415		
gaa	tgc	cat	cat	cgc	tat	gct	gaa	tta	tat	gtg	att	gat	gtc	aat	atc	1296
Glu	Cys	His	His	Arg	Tyr	Ala	Glu	Leu	Tyr	Val	Ile	Asp	Val	Asn	Ile	
			420				425						430			
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Asn	Ile	Ser	Cys	Glu	Thr	Asp	Gly	Tyr	Leu	Thr	Lys	Met	Thr	Cys	Arg	
		435					440					445				
tgg	tca	acc	agt	aca	atc	cag	tca	ctt	gcg	gaa	agc	act	ttg	caa	ttg	1392
Trp	Ser	Thr	Ser	Thr	Ile	Gln	Ser	Leu	Ala	Glu	Ser	Thr	Leu	Gln	Leu	
	450					455					460					
agg	tat	cat	agg	agc	agc	ctt	tac	tgt	tct	gat	att	cca	tct	att	cat	1440
Arg	Tyr	His	Arg	Ser	Ser	Leu	Tyr	Cys	Ser	Asp	Ile	Pro	Ser	Ile	His	
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ccc	ata	tct	gag	ccc	aaa	gat	tgc	tat	ttg	cag	agt	gat	ggg	ttt	tat	1488
Pro	Ile	Ser	Glu	Pro	Lys	Asp	Cys	Tyr	Leu	Gln	Ser	Asp	Gly	Phe	Tyr	
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gtc ctt cct gat tct gtg gtg aag cca ctg cct cca tcc agt gtg aaa Val Leu 530 Pro Asp Ser Val 535 Lys Pro Leu Pro 540 Ser Ser Val Lys	1632
gca gaa att act ata aac att gga tta ttg aaa ata tct tgg gaa aag Ala Glu Ile Thr Ile Asn 550 Ile Gly Leu Leu Lys 555 Ile Ser Trp Glu Lys 560	1680
cca gtc ttt cca gag aat aac ctt caa ttc cag att cgc tat ggt tta Pro Val Phe Pro Glu 565 Asn Asn Leu Gln Phe 570 Gln Ile Arg Tyr Gly 575 Leu	1728
agt gga aaa gaa gta caa tgg aag atg tat gag gtt tat gat gca aaa Ser Gly Lys Glu 580 Val Gln Trp Lys Met 585 Tyr Glu Val Tyr Asp 590 Ala Lys	1776
tca aaa tct gtc agt ctc cca gtt cca gac ttg tgt gca gtc tat gct Ser Lys Ser 595 Val Ser Leu Pro Val 600 Pro Asp Leu Cys Ala 605 Val Tyr Ala	1824
gtt cag gtg cgc tgt aag agg cta gat gga ctg gga tat tgg agt aat Val Gln Val Arg Cys Lys Arg 615 Leu Asp Gly Leu Gly 620 Tyr Trp Ser Asn	1872
tgg agc aat cca gcc tac aca gtt gtc atg gat ata aaa gtt cct atg Trp Ser Asn Pro Ala Tyr 630 Thr Val Val Met Asp 635 Ile Lys Val Pro Met 640	1920
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gag aaa aat gtc act tta ctt tgg aag ccc ctg atg aaa aat gac tca Glu Lys Asn Val 660 Thr Leu Leu Trp Lys 665 Pro Leu Met Lys Asn 670 Asp Ser	2016
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gga aca tgg tca gaa gat gtg gga aat cac acg aaa ttc act ttc ctg Gly Thr 690 Trp Ser Glu Asp Val 695 Gly Asn His Thr Lys 700 Phe Thr Phe Leu	2112
tgg aca gag caa gca cat act gtt acg gtt ctg gcc atc aat tca att Trp Thr 705 Glu Gln Ala His 710 Thr Val Thr Val Leu Ala Ile Asn Ser Ile 720	2160
ggt gct tct gtt gca aat ttt aat tta acc ttt tca tgg cct atg agc Gly Ala Ser Val 725 Ala Asn Phe Asn Leu Thr 730 Phe Ser Trp Pro Met 735 Ser	2208
aaa gta aat atc gtg cag tca ctc agt gct tat cct tta aac agc agt Lys Val Asn Ile 740 Val Gln Ser Leu Ser 745 Ala Tyr Pro Leu Asn 750 Ser Ser	2256

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Tyr	Phe	Ile	Ile	Glu	Trp	Lys	Asn	Leu	Asn	Glu	Asp	Gly	Glu	Ile	Lys	
	770					775					780					
tgg	ctt	aga	atc	tct	tca	tct	gtt	aag	aag	tat	tat	atc	cat	gat	cat	2400
Trp	Leu	Arg	Ile	Ser	Ser	Ser	Val	Lys	Lys	Tyr	Tyr	Ile	His	Asp	His	
785					790					795					800	
ttt	atc	ccc	att	gag	aag	tac	cag	ttc	agt	ctt	tac	cca	ata	ttt	atg	2448
Phe	Ile	Pro	Ile	Glu	Lys	Tyr	Gln	Phe	Ser	Leu	Tyr	Pro	Ile	Phe	Met	
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gaa	gga	gtg	gga	aaa	cca	aag	ata	att	aat	agt	ttc	act	caa	gat	gat	2496
Glu	Gly	Val	Gly	Lys	Pro	Lys	Ile	Ile	Asn	Ser	Phe	Thr	Gln	Asp	Asp	
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att	gaa	aaa	cac	cag	agt	gat	gca	ggt	tta	tat	gta	att	gtg	cca	gta	2544
Ile	Glu	Lys	His	Gln	Ser	Asp	Ala	Gly	Leu	Tyr	Val	Ile	Val	Pro	Val	
		835					840					845				
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Ile	Ile	Ser	Ser	Ser	Ile	Leu	Leu	Leu	Gly	Thr	Leu	Leu	Ile	Ser	His	
	850					855					860					
caa	aga	atg	aaa	aag	cta	ttt	tgg	gaa	gat	gtt	ccg	aac	ccc	aag	aat	2640
Gln	Arg	Met	Lys	Lys	Leu	Phe	Trp	Glu	Asp	Val	Pro	Asn	Pro	Lys	Asn	
865					870				875						880	
tgt	tcc	tgg	gca	caa	gga	ctt	aat	ttt	cag	aag	aga	acg	gac	att	ctt	2688
Cys	Ser	Trp	Ala	Gln	Gly	Leu	Asn	Phe	Gln	Lys	Arg	Thr	Asp	Ile	Leu	
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Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr Asp Tyr Phe Leu
35 40 45

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Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser Asn Gly His Tyr
 50 55 60
 Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly Thr His Phe Ser
 65 70 75 80
 Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg Ser Glu Gln Asp
 85 90 95
 Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly Lys Thr Phe Val
 100 105 110
 Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp Ala Asn Trp Asn
 115 120 125
 Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe Ile Cys Tyr Val
 130 135 140
 Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn Tyr Lys Val His
 145 150 155 160
 Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser Pro Leu Val Pro
 165 170 175
 Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys Ser Val His Glu
 180 185 190
 Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys Leu Asn Asp Thr
 195 200 205
 Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val Ile Phe Gln Ser
 210 215 220
 Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys Pro Asp Pro Pro
 225 230 235 240
 Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn Leu Lys Ile Ser
 245 250 255
 Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln Tyr Gln Val Lys
 260 265 270
 Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala Asp Lys Ile Val
 275 280 285
 Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro Gly Ser Ser Tyr
 290 295 300

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Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro Gly Ile Trp Ser
305 310 315 320

Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp Val Ile Tyr Phe
325 330 335

Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val Ser Phe His Cys
340 345 350

Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys Glu Ile Val Trp
355 360 365

Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln Tyr Asp Val Val
370 375 380

Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu Asn Glu Thr Lys
385 390 395 400

Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu His
405 410 415

Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile
420 425 430

Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg
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Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser Thr Leu Gln Leu
450 455 460

Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile Pro Ser Ile His
465 470 475 480

Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser Asp Gly Phe Tyr
485 490 495

Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp
500 505 510

Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser Pro Pro Thr Cys
515 520 525

Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro Ser Ser Val Lys
530 535 540

Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile Ser Trp Glu Lys
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Ser	Lys	Ser 595	Val	Ser	Leu	Pro	Val 600	Pro	Asp	Leu	Cys	Ala 605	Val	Tyr	Ala
Val	Gln 610	Val	Arg	Cys	Lys	Arg 615	Leu	Asp	Gly	Leu	Gly 620	Tyr	Trp	Ser	Asn
Trp 625	Ser	Asn	Pro	Ala	Tyr 630	Thr	Val	Val	Met	Asp 635	Ile	Lys	Val	Pro	Met 640
Arg	Gly	Pro	Glu	Phe 645	Trp	Arg	Ile	Ile	Asn 650	Gly	Asp	Thr	Met	Lys 655	Lys
Glu	Lys	Asn	Val 660	Thr	Leu	Leu	Trp	Lys 665	Pro	Leu	Met	Lys	Asn 670	Asp	Ser
Leu	Cys	Ser 675	Val	Gln	Arg	Tyr	Val 680	Ile	Asn	His	His	Thr 685	Ser	Cys	Asn
Gly	Thr 690	Trp	Ser	Glu	Asp	Val 695	Gly	Asn	His	Thr	Lys 700	Phe	Thr	Phe	Leu
Trp 705	Thr	Glu	Gln	Ala	His 710	Thr	Val	Thr	Val	Leu 715	Ala	Ile	Asn	Ser	Ile 720
Gly	Ala	Ser	Val	Ala 725	Asn	Phe	Asn	Leu	Thr 730	Phe	Ser	Trp	Pro	Met 735	Ser
Lys	Val	Asn	Ile 740	Val	Gln	Ser	Leu	Ser 745	Ala	Tyr	Pro	Leu	Asn 750	Ser	Ser
Cys	Val	Ile 755	Val	Ser	Trp	Ile	Leu 760	Ser	Pro	Ser	Asp	Tyr 765	Lys	Leu	Met
Tyr	Phe 770	Ile	Ile	Glu	Trp	Lys 775	Asn	Leu	Asn	Glu	Asp 780	Gly	Glu	Ile	Lys
Trp 785	Leu	Arg	Ile	Ser	Ser 790	Ser	Val	Lys	Lys	Tyr 795	Tyr	Ile	His	Asp	His 800

Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Ile Phe Met
805 810 815

Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe Thr Gln Asp Asp
820 825 830

Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val Ile Val Pro Val
835 840 845

Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu Leu Ile Ser His
850 855 860

Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro Asn Pro Lys Asn
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48

ctc ctg atg ctc ttc cac ctg gga ctc caa gct tca atc tcg gcg cgc
Leu Leu Met Leu Phe His Leu Gly Leu Gln Ala Ser Ile Ser Ala Arg

96

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gag Glu	gac Asp	ctg Leu	acg Thr
cgt Arg 45	tat Tyr	cca Pro	att Ile
			144
act Thr	cct Pro 50	tgg Trp	aga Arg
ttt Phe	aag Lys	ttg Leu 55	tct Ser
tgc Cys	atg Met	cca Pro 60	cca Pro
aat Asn	tca Ser	acc Thr	tat Tyr
			192
gac Asp 65	tac Tyr	ttc Phe	ctt Leu
ttg Leu	cct Pro 70	gct Ala	gga Gly
ctc Leu	tca Ser	aag Lys 75	aat Asn
act Thr	tca Ser	aat Asn	tcg Ser 80
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aat Asn	gga Gly	cat His	tat Tyr
gag Glu 85	aca Thr	gct Ala	ggt Gly
gaa Glu	cct Pro 90	aag Lys	ttt Phe
aat Asn	tca Ser	agt Ser 95	ggt Gly
			288
act Thr	cac His	ttt Phe	tct Ser 100
aac Asn	tta Leu	tcc Ser	aaa Lys
aca Thr 105	act Thr	ttc Phe	cac His
tgt Cys	tgc Cys 110	ttt Phe	cgg Arg
			336
agt Ser	gag Glu	caa Gln 115	gat Asp
aga Arg	aac Asn	tgc Cys	tcc Ser 120
tta Leu	tgt Cys	gca Ala	gac Asp
aac Asn 125	att Ile	gaa Glu	gga Gly
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acg Thr	aca Thr 130	ttt Phe	gtt Val
tca Ser	aca Thr	gta Val 135	aat Asn
tct Ser	tta Leu	gtt Val	ttt Phe 140
caa Gln	caa Gln	ata Ile	gat Asp
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gca Ala 145	aac Asn	tgg Trp	aac Asn
ata Ile	cag Gln 150	tgc Cys	tgg Trp
cta Leu	aaa Lys	gga Gly 155	gac Asp
tta Leu	aaa Lys	tta Leu	ttc Phe 160
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atc Ile	tgt Cys	tat Tyr	gtg Val
gag Glu 165	tca Ser	tta Leu	ttt Phe
aag Lys	aat Asn 170	cta Leu	ttc Phe
agg Arg	aat Asn 175	tat Tyr	aac Asn
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tat Tyr	aag Lys	gtc Val	cat His 180
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gat Asp	tca Ser		
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cct Pro	ctg Leu	gtt Val 195	ccc Pro
caa Gln	aaa Lys	ggc Gly	agt Ser 200
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ctc Leu 225	aac Asn	gac Asp	act Thr
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cct Pro 245	cta Leu	atg Met	tca Ser
ggt Gly	ttg Leu	cat His 265	atg Met
gaa Glu	atc Ile	aca Thr	gat Asp
gat Asp 270	ggg Gly	aat Asn	
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cca cca	ttg gta	cca ttt	cca ctt
caa			
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Leu	Lys	Ile 275	Ser	Trp	Ser	Ser	Pro 280	Pro	Leu	Val	Pro	Phe 285	Pro	Leu	Gln	
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gac Asp 305	aag Lys	att Ile	gtc Val	tca Ser	gct Ala 310	aca Thr	tcc Ser	ctg Leu	cta Leu	gta Val 315	gac Asp	agt Ser	ata Ile	ctt Leu	cct Pro 320	960
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gga Gly	atc Ile	tgg Trp	agt Ser 340	gac Asp	tgg Trp	agt Ser	act Thr	cct Pro 345	cgt Arg	gtc Val	ttt Phe	acc Thr	aca Thr 350	caa Gln	gat Asp	1056
gtc Val	ata Ile	tac Tyr 355	ttt Phe	cca Pro	cct Pro	aaa Lys	att Ile 360	ctg Leu	aca Thr	agt Ser	gtt Val	ggg Gly 365	tct Ser	aat Asn	gtt Val	1104
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aat Asn	gaa Glu	acc Thr	aaa Lys 420	cct Pro	cga Arg	gga Gly	aag Lys	ttt Phe 425	acc Thr	tat Tyr	gat Asp	gca Ala	gtg Val 430	tac Tyr	tgc Cys	1296
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gat Asp	gtc Val 450	aat Asn	atc Ile	aat Asn	atc Ile	tca Ser 455	tgt Cys	gaa Glu	act Thr	gat Asp	ggg Gly 460	tac Tyr	tta Leu	act Thr	aaa Lys	1392
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cca Pro	tct Ser	att Ile	cat His 500	ccc Pro	ata Ile	tct Ser	gag Glu	ccc Pro 505	aaa Lys	gat Asp	tgc Cys	tat Tyr	ttg Leu 510	cag Gln	agt Ser	1536
gat Asp	ggt Gly	ttt Phe 515	tat Tyr	gaa Glu	tgc Cys	att Ile	ttc Phe 520	cag Gln	cca Pro	atc Ile	ttc Phe	cta Leu 525	tta Leu	tct Ser	ggc Gly	1584

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cgc Arg	tat Tyr	ggg Gly 595	tta Leu	agt Ser	gga Gly	aaa Lys	gaa Glu 600	gta Val	caa Gln	tgg Trp	aag Lys	atg Met 605	tat Tyr	gag Glu	gtt Val	1824
tat Tyr	gat Asp 610	gca Ala	aaa Lys	tca Ser	aaa Lys	tct Ser 615	gtc Val	agt Ser	ctc Leu	cca Pro	gtt Val 620	cca Pro	gac Asp	ttg Leu	tgt Cys	1872
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tgg Trp	cct Pro	atg Met 755	agc Ser	aaa Lys	gta Val	aat Asn	atc Ile 760	gtg Val	cag Gln	tca Ser	ctc Leu	agt Ser 765	gct Ala	tat Tyr	cct Pro	2304
tta Leu	aac Asn 770	agc Ser	agt Ser	tgt Cys	gtg Val	att Ile 775	gtt Val	tcc Ser	tgg Trp	ata Ile	cta Leu 780	tca Ser	ccc Pro	agt Ser	gat Asp	2352

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ggt Gly	gaa Glu	ata Ile	aaa Lys	tgg Trp 805	ctt Leu	aga Arg	atc Ile	tct Ser	tca Ser 810	tct Ser	ggt Val	aag Lys	aag Lys	tat Tyr 815	tat Tyr	2448
atc Ile	cat His	gat Asp	cat His 820	ttt Phe	atc Ile	ccc Pro	att Ile	gag Glu 825	aag Lys	tac Tyr	cag Gln	ttc Phe	agt Ser 830	ctt Leu	tac Tyr	2496
cca Pro	ata Ile	ttt Phe 835	atg Met	gaa Glu	gga Gly	gtg Val	gga Gly 840	aaa Lys	cca Pro	aag Lys	ata Ile	att Ile 845	aat Asn	agt Ser	ttc Phe	2544
act Thr	caa Gln 850	gat Asp	gat Asp	att Ile	gaa Glu	aaa Lys 855	cac His	cag Gln	agt Ser	gat Asp	gca Ala 860	ggt Gly	tta Leu	tat Tyr	gta Val	2592
att Ile 865	gtg Val	cca Pro	gta Val	att Ile	att Ile 870	tcc Ser	tct Ser	tcc Ser	atc Ile	tta Leu 875	ttg Leu	ctt Leu	gga Gly	aca Thr	tta Leu 880	2640
tta Leu	ata Ile	tca Ser	cac His	caa Gln 885	aga Arg	atg Met	aaa Lys	aag Lys	cta Leu 890	ttt Phe	tgg Trp	gaa Glu	gat Asp	gtt Val 895	ccg Pro	2688
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acg Thr	gac Asp	att Ile 915	ctg Leu	gat Asp	cca Pro	ccg Pro	gct Ala 920	aga Arg	gcc Ala	acc Thr	atg Met	acc Thr 925	agc Ser	aag Lys	gtg Val	2784
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gcc Ala 945	agg Arg	tgc Cys	aag Lys	cag Gln	atg Met 950	aac Asn	gtg Val	ctg Leu	gac Asp	agc Ser 955	ttc Phe	atc Ile	aac Asn	tac Tyr	tac Tyr 960	2880
gac Asp	agc Ser	gag Glu	aag Lys	cac His 965	gcc Ala	gag Glu	aac Asn	gcc Ala	gtg Val 970	atc Ile	ttc Phe	ctg Leu	cac His	ggc Gly 975	aac Asn	2928
gcc Ala	gct Ala	agc Ser	agc Ser 980	tac Tyr	ctg Leu	tgg Trp	agg Arg	cac His 985	gtg Val	gtg Val	ccc Pro	cac His	atc Ile 990	gag Glu	ccc Pro	2976
gtg Val	gcc Ala	agg Arg 995	tgc Cys	atc Ile	atc Ile	ccc Pro	gat Asp 1000	ctg Leu	atc Ile	ggc Gly	atg Met	ggc Gly 1005	aag Lys	agc Ser	ggc Gly	3024
aag Lys	agc Ser 1010	ggc Gly	aac Asn	ggc Gly	agc Ser	tac Tyr 1015	agg Arg	ctg Leu	ctg Leu	gac Asp	cac His 1020	tac Tyr	aag Lys	tac Tyr		3069
ctg Leu	acc Thr	gcc Ala	tgg Trp	ttc Phe	gag Glu	ctc Leu	ctg Leu	aac Asn	ctg Leu	ccc Pro	aag Lys	aag Lys	atc Ile	atc Ile		3114

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gag gac atc gcc ctg atc aag Glu Asp Ile Ala Leu Ile Lys 1085 1090	agc gag gag ggc gag aag atg gtg Ser Glu Glu Gly Glu Lys Met Val 1095	3294	
ctg gag aac aac ttc ttc gtg Leu Glu Asn Asn Phe Phe Val 1100 1105	gag acc atg ctg ccc agc aag atc Glu Thr Met Leu Pro Ser Lys Ile 1110	3339	
atg aga aag ctg gag ccc gag Met Arg Lys Leu Glu Pro Glu 1115 1120	gag ttc gcc gcc tac ctg gag ccc Glu Phe Ala Ala Tyr Leu Glu Pro 1125	3384	
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Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile
35 40 45

Thr Pro Trp Arg Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr
50 55 60

Asp Tyr Phe Leu Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser
65 70 75 80

Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly
85 90 95

Thr His Phe Ser Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg
100 105 110

Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly
115 120 125

Thr Thr Phe Val Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp
130 135 140

Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe
145 150 155 160

Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn
165 170 175

Tyr Lys Val His Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser
Page 26

180

Pro Leu Val Pro Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys
195 200 205

Ser Val His Glu Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys
210 215 220

Leu Asn Asp Thr Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val
225 230 235 240

Ile Phe Arg Ser Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys
245 250 255

Pro Asp Pro Pro Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn
260 265 270

Leu Lys Ile Ser Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln
275 280 285

Tyr Gln Val Lys Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala
290 295 300

Asp Lys Ile Val Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro
305 310 315 320

Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro
325 330 335

Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp
340 345 350

Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val
355 360 365

Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys
370 375 380

Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln
385 390 395 400

Tyr Asp Val Val Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu
405 410 415

Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys
420 425 430

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Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile
435 440 445

Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys
450 455 460

Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser
465 470 475 480

Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile
485 490 495

Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser
500 505 510

Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly
515 520 525

Tyr Thr Met Trp Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser
530 535 540

Pro Pro Thr Cys Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro
545 550 555 560

Ser Ser Val Lys Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile
565 570 575

Ser Trp Glu Lys Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile
580 585 590

Arg Tyr Gly Leu Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val
595 600 605

Tyr Asp Ala Lys Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys
610 615 620

Ala Val Tyr Ala Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly
625 630 635 640

Tyr Trp Ser Asn Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile
645 650 655

Lys Val Pro Met Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp
660 665 670

Thr Met Lys Lys Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met
675 680 685

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Lys Asn Asp Ser Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His
690 695 700

Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys
705 710 715 720

Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala
725 730 735

Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser
740 745 750

Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro
755 760 765

Leu Asn Ser Ser Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp
770 775 780

Tyr Lys Leu Met Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp
785 790 795 800

Gly Glu Ile Lys Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr
805 810 815

Ile His Asp His Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr
820 825 830

Pro Ile Phe Met Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe
835 840 845

Thr Gln Asp Asp Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val
850 855 860

Ile Val Pro Val Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu
865 870 875 880

Leu Ile Ser His Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro
885 890 895

Asn Pro Lys Asn Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg
900 905 910

Thr Asp Ile Leu Asp Pro Pro Ala Arg Ala Thr Met Thr Ser Lys Val
915 920 925

Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln Trp Trp
930 935 940

Serial No 10-774,721.txt

Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn Tyr Tyr
945 950 955 960

Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His Gly Asn
965 970 975

Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile Glu Pro
980 985 990

Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys Ser Gly
995 1000 1005

Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys Tyr
1010 1015 1020

Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile
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Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser
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Tyr Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser
1055 1060 1065

Val Val Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu
1070 1075 1080

Glu Asp Ile Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val
1085 1090 1095

Leu Glu Asn Asn Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile
1100 1105 1110

Met Arg Lys Leu Glu Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro
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Phe Lys Glu Lys Gly Glu Val Arg Arg Pro Thr Leu Ser Trp Pro
1130 1135 1140

Arg Glu Ile Pro Leu Val Lys Gly Gly Lys Pro Asp Val Val Gln
1145 1150 1155

Ile Val Arg Asn Tyr Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu
1160 1165 1170

Pro Lys Met Phe Ile Glu Ser Asp Pro Gly Phe Phe Ser Asn Ala
Page 30

1175

1180

1185

Ile Val Glu Gly Ala Lys Lys Phe Pro Asn Thr Glu Phe Val Lys
1190 1195 1200

Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala Pro Asp Glu Met
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Leu Leu Met Leu Phe His Leu Gly Leu Gln Ala Ser Ile Ser Ala Arg
20 25 30

cag gag cag aag ctt atc tcg gag gag gac ctg acg cgt tat cca att 144
Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile
35 40 45

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gac Asp 65	tac Tyr	ttc Phe	ctt Leu	ttg Leu	cct Pro 70	gct Ala	gga Gly	ctc Leu	tca Ser	aag Lys 75	aat Asn	act Thr	tca Ser	aat Asn	tcg Ser 80	240
aat Asn	gga Gly	cat His	tat Tyr	gag Glu 85	aca Thr	gct Ala	gtt Val	gaa Glu	cct Pro 90	aag Lys	ttt Phe	aat Asn	tca Ser	agt Ser 95	ggt Gly	288
act Thr	cac His	ttt Phe	tct Ser 100	aac Asn	tta Leu	tcc Ser	aaa Lys	aca Thr 105	act Thr	ttc Phe	cac His	tgt Cys	tgc Cys 110	ttt Phe	cgg Arg	336
agt Ser	gag Glu	caa Gln 115	gat Asp	aga Arg	aac Asn	tgc Cys	tcc Ser 120	tta Leu	tgt Cys	gca Ala	gac Asp	aac Asn 125	att Ile	gaa Glu	gga Gly	384
acg Thr	aca Thr 130	ttt Phe	gtt Val	tca Ser	aca Thr	gta Val 135	aat Asn	tct Ser	tta Leu	gtt Val	ttt Phe 140	caa Gln	caa Gln	ata Ile	gat Asp	432
gca Ala 145	aac Asn	tgg Trp	aac Asn	ata Ile	cag Gln 150	tgc Cys	tgg Trp	cta Leu	aaa Lys	gga Gly 155	gac Asp	tta Leu	aaa Lys	tta Leu	ttc Phe 160	480
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cct Pro	ctg Leu	gtt Val 195	ccc Pro	caa Gln	aaa Lys	ggc Gly	agt Ser 200	ttt Phe	cag Gln	atg Met	gtt Val	cac His 205	tgc Cys	aat Asn	tgc Cys	624
agt Ser	gtt Val 210	cat His	gaa Glu	tgt Cys	tgt Cys	gaa Glu 215	tgt Cys	ctt Leu	gtg Val	cct Pro	gtg Val 220	cca Pro	aca Thr	gcc Ala	aaa Lys	672
ctc Leu 225	aac Asn	gac Asp	act Thr	ctc Leu	ctt Leu 230	atg Met	tgt Cys	ttg Leu	aaa Lys	atc Ile 235	aca Thr	tct Ser	ggt Gly	gga Gly	gta Val 240	720
att Ile	ttc Phe	cgg Arg	tca Ser	cct Pro 245	cta Leu	atg Met	tca Ser	gtt Val	cag Gln 250	ccc Pro	ata Ile	aat Asn	atg Met	gtg Val 255	aag Lys	768
cct Pro	gat Asp	cca Pro	cca Pro 260	tta Leu	ggt Gly	ttg Leu	cat His	atg Met 265	gaa Glu	atc Ile	aca Thr	gat Asp	gat Asp 270	ggt Gly	aat Asn	816
tta Leu	aag Lys	att Ile 275	tct Ser	tgg Trp	tcc Ser	agc Ser	cca Pro 280	cca Pro	ttg Leu	gta Val	cca Pro	ttt Phe 285	cca Pro	ctt Leu	caa Gln	864
tat Tyr	caa Gln	gtg Val	aaa Lys	tat Tyr	tca Ser	gag Glu	aat Asn	tct Ser	aca Thr	aca Thr	gtt Val	atc Ile	aga Arg	gaa Glu	gct Ala	912

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tca Ser	gct Ala 310	aca Thr	tcc Ser
ctg Leu	cta Leu	gta Val 315	gac Asp
agt Ser	ata Ile	ctt Leu	cct Pro 320
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gag Glu 325	ggt Val	cag Gln	gtg Val
agg Arg	ggc Gly 330	aag Lys	aga Arg
ctg Leu	gat Asp	ggc Gly 335	cca Pro
1008			
gga Gly	atc Ile	tgg Trp	agt Ser 340
gac Asp	tgg Trp	agt Ser	act Thr
cct Pro 345	cgt Arg	gtc Val	ttt Phe
acc Thr	aca Thr 350	caa Gln	gat Asp
1056			
gtc Val	ata Ile	tac Tyr 355	ttt Phe
cca Pro	cct Pro	aaa Lys	att Ile 360
ctg Leu	aca Thr	agt Ser	ggt Val
ggg Gly 365	tct Ser	aat Asn	ggt Val
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atc Ile	tat Tyr	aag Lys 375	aag Lys
gaa Glu	aac Asn	aag Lys	att Ile 380
ggt Val	ccc Pro	tca Ser	aaa Lys
1152			
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tgg Trp	atg Met 390	aat Asn	tta Leu
gct Ala	gag Glu	aaa Lys 395	att Ile
cct Pro	caa Gln	agc Ser	cag Gln 400
1200			
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aaa Lys 410	ggt Val	act Thr	ttt Phe
ttc Phe	aat Asn 415	ctg Leu	
1248			
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cct Pro	cga Arg	gga Gly	aag Lys
ttt Phe 425	acc Thr	tat Tyr	gat Asp
gca Ala 430	gtg Val	tac Tyr	tgc Cys
1296			
tgc Cys	aat Asn	gaa Glu 435	cat His
gaa Glu	tgc Cys	cat His 440	cgc Arg
tat Tyr	gct Ala	gaa Glu 445	tta Leu
tat Tyr	gtg Val	att Ile	
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gat Asp	gtc Val 450	aat Asn	atc Ile
aat Asn	atc Ile	tca Ser 455	tgt Cys
gaa Glu	act Thr	gat Asp	ggg Gly 460
tac Tyr	tta Leu	act Thr	aaa Lys
1392			
atg Met 465	act Thr	tgc Cys	aga Arg
tgg Trp	tca Ser 470	acc Thr	agt Ser
aca Thr	atc Ile	cag Gln 475	tca Ser
ctt Leu	gcg Ala	gaa Glu	agc Ser 480
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agg Arg	tat Tyr	cat His	agg Arg
agc Ser 490	agc Ser	ctt Leu	tac Tyr
tgt Cys	tct Ser	gat Asp 495	att Ile
1488			
cca Pro	tct Ser	att Ile 500	ccc Pro
ata Ile	tct Ser	gag Glu	ccc Pro 505
aaa Lys	gat Asp	tgc Cys	tat Tyr
ttg Leu 510	cag Gln	agt Ser	
1536			
gat Asp	ggt Gly	ttt Phe 515	tat Tyr
gaa Glu	tgc Cys	att Ile	ttc Phe 520
cag Gln	cca Pro	atc Ile	ttc Phe 525
cta Leu 525	tta Leu	tct Ser	ggc Gly
1584			
tac Tyr	aca Thr 530	atg Met	tgg Trp
att Ile	agg Arg	atc Ile 535	aat Asn
cac His	tct Ser	cta Leu	ggt Gly 540
tca Ser	ctt Leu	gac Asp	tct Ser
1632			
cca Pro	cca Pro	aca Thr	tgt Trp
gtc Val	ctt Leu	cct Pro	gat Asp
tct Ser	gtg Val	aag Lys	cca Pro
ctg Leu	cct Pro	cca Pro	
1680			

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Pro 545	Pro	Thr	Cys	Val	Leu 550	Pro	Asp	Ser	Val	Val 555	Lys	Pro	Leu	Pro	Pro 560	
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tct Ser	tgg Trp	gaa Glu	aag Lys 580	cca Pro	gtc Val	ttt Phe	cca Pro	gag Glu 585	aat Asn	aac Asn	ctt Leu	caa Gln	ttc Phe 590	cag Gln	att Ile	1776
cgc Arg	tat Tyr	ggt Gly 595	tta Leu	agt Ser	gga Gly	aaa Lys	gaa Glu 600	gta Val	caa Gln	tgg Trp	aag Lys	atg Met 605	tat Tyr	gag Glu	gtt Val	1824
tat Tyr	gat Asp 610	gca Ala	aaa Lys	tca Ser	aaa Lys	tct Ser 615	gtc Val	agt Ser	ctc Leu	cca Pro	gtt Val 620	cca Pro	gac Asp	ttg Leu	tgt Cys	1872
gca Ala 625	gtc Val	tat Tyr	gct Ala	gtt Val	cag Gln 630	gtg Val	cgc Arg	tgt Cys	aag Lys	agg Arg 635	cta Leu	gat Asp	gga Gly	ctg Leu	gga Gly 640	1920
tat Tyr	tgg Trp	agt Ser	aat Asn	tgg Trp 645	agc Ser	aat Asn	cca Pro	gcc Ala	tac Tyr 650	aca Thr	gtt Val	gtc Val	atg Met	gat Asp 655	ata Ile	1968
aaa Lys	gtt Val	cct Pro	atg Met 660	aga Arg	gga Gly	cct Pro	gaa Glu	ttt Phe 665	tgg Trp	aga Arg	ata Ile	att Ile	aat Asn 670	gga Gly	gat Asp	2016
act Thr	atg Met	aaa Lys 675	aag Lys	gag Glu	aaa Lys	aat Asn	gtc Val 680	act Thr	tta Leu	ctt Leu	tgg Trp	aag Lys 685	ccc Pro	ctg Leu	atg Met	2064
aaa Lys	aat Asn 690	gac Asp	tca Ser	ttg Leu	tgc Cys	agt Ser 695	gtt Val	cag Gln	aga Arg	tat Tyr	gtg Val 700	ata Ile	aac Asn	cat His	cat His	2112
act Thr 705	tcc Ser	tgc Cys	aat Asn	gga Gly 710	aca Thr	tgg Trp	tca Ser	gaa Glu	gat Asp	gtg Val 715	gga Gly	aat Asn	cac His	acg Thr	aaa Lys 720	2160
ttc Phe	act Thr	ttc Phe	ctg Leu	tgg Trp 725	aca Thr	gag Glu	caa Gln	gca Ala	cat His 730	act Thr	gtt Val	acg Thr	gtt Val	ctg Leu 735	gcc Ala	2208
atc Ile	aat Asn	tca Ser	att Ile 740	ggt Gly	gct Ala	tct Ser	gtt Val	gca Ala 745	aat Asn	ttt Phe	aat Asn	tta Leu	acc Thr 750	ttt Phe	tca Ser	2256
tgg Trp	cct Pro	atg Met 755	agc Ser	aaa Lys	gta Val	aat Asn	atc Ile 760	gtg Val	cag Gln	tca Ser	ctc Leu	agt Ser 765	gct Ala	tat Tyr	cct Pro	2304
tta Leu	aac Asn 770	agc Ser	agt Ser	tgt Cys	gtg Val	att Ile 775	gtt Val	tcc Ser	tgg Trp	ata Ile	cta Leu 780	tca Ser	ccc Pro	agt Ser	gat Asp	2352
tac Tyr 785	aag Lys	cta Leu	atg Met	tat Tyr	ttt Phe 790	att Ile	att Ile	gag Glu	tgg Trp	aaa Lys 795	aat Asn	ctt Leu	aat Asn	gaa Glu	gat Asp 800	2400

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ggt gaa ata aaa tgg ctt aga atc tct tca tct gtt aag aag tat tat	2448
Gly Glu Ile Lys Trp 805 Leu Arg Ile Ser Ser 810 Val Lys Lys Tyr Tyr 815	
atc cat gat cat ttt atc ccc att gag aag tac cag ttc agt ctt tac	2496
Ile His Asp His Phe 820 Ile Pro Ile Glu Lys Tyr Gln Phe 830 Ser Leu Tyr 830	
cca ata ttt atg gaa gga gtg gga aaa cca aag ata att aat agt ttc	2544
Pro Ile Phe 835 Met Glu Gly Val 840 Gly Lys Pro Lys Ile 845 Ile Asn Ser Phe 845	
act caa gat gat att gaa aaa cac cag agt gat gca ggt tta tat gta	2592
Thr Gln Asp Asp Ile Glu Lys 855 His Gln Ser Asp Ala Gly Leu Tyr Val 860	
att gtg cca gta att att tcc tct tcc atc tta ttg ctt gga aca tta	2640
Ile Val 865 Pro Val Ile 870 Ile Ser Ser Ser Ile 875 Leu Leu Gly Thr Leu 880	
tta ata tca cac caa aga atg aaa aag cta ttt tgg gaa gat gtt ccg	2688
Leu Ile Ser His 885 Gln Arg Met Lys Lys 890 Leu Phe Trp Glu Asp Val Pro 895	
aac ccc aag aat tgt tcc tgg gca caa gga ctt aat ttt cag aag aga	2736
Asn Pro Lys Asn 900 Cys Ser Trp Ala Gln 905 Gly Leu Asn Phe 910 Gln Lys Arg 910	
acg gac att ctg gat cca ccg gtc gcc acc atg gtg agc aag ggc gag	2784
Thr Asp Ile 915 Leu Asp Pro Pro Val 920 Ala Thr Met Val Ser Lys Gly Glu 925	
gag ctg ttc acc ggg gtg gtg ccc atc ctg gtc gag ctg gac ggc gac	2832
Glu Leu Phe Thr Gly Val 930 Val 935 Pro Ile Leu Val 940 Glu Leu Asp Gly Asp 940	
gta aac ggc cac aag ttc agc gtg tcc ggc gag ggc gag ggc gat gcc	2880
Val Asn Gly His Lys Phe 950 Ser Val Ser Gly Glu Gly Glu Gly Asp Ala 960	
acc tac ggc aag ctg acc ctg aag ttc atc tgc acc acc ggc aag ctg	2928
Thr Tyr Gly Lys 965 Leu Thr Leu Lys Phe 970 Ile Cys Thr Thr Gly Lys Leu 975	
ccc gtg ccc tgg ccc acc ctc gtg acc acc ttc ggc tac ggc gtg cag	2976
Pro Val 980 Pro Trp 980 Pro Thr Leu Val 985 Thr Thr Phe Gly Tyr 990 Gly Val Gln 990	
tgc ttc gcc cgc tac ccc gac cac atg cgc cag cac gac ttc ttc aag	3024
Cys Phe Ala Arg Tyr Pro Asp His 1000 Met Arg Gln His Asp 1005 Phe Phe Lys 1005	
tcc gcc atg ccc gaa ggc tac gtc cag gag cgc acc atc ttc ttc	3069
Ser Ala Met Pro Glu Gly Tyr 1010 Val Gln Glu Arg Thr 1020 Ile Phe Phe 1020	
aag gac gac ggc aac tac aag acc cgc gcc gag gtg aag ttc gag	3114
Lys Asp Asp Gly Asn Tyr Lys 1030 Thr Arg Ala Glu Val 1035 Lys Phe Glu 1035	
ggc gac acc ctg gtg aac cgc atc gag ctg aag ggc atc gac ttc	3159
Gly Asp Thr Leu Val Asn Arg 1045 Ile Glu Leu Lys 1050 Gly Ile Asp Phe 1050	

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aag Lys	gag Glu 1055	gac Asp	ggc Gly	aac Asn	atc Ile	ctg Leu 1060	ggg Gly	cac His	aag Lys	ctg Leu	gag Glu 1065	tac Tyr	aac Asn	tac Tyr	3204
aac Asn 1070	agc Ser	cac His	aac Asn	gtc Val	tat Tyr	atc Ile 1075	atg Met	gcc Ala	gac Asp	aag Lys	cag Gln 1080	aag Lys	aac Asn	ggc Gly	3249
atc Ile 1085	aag Lys	gtg Val	aac Asn	ttc Phe	aag Lys	atc Ile 1090	cgc Arg	cac His	aac Asn	atc Ile	gag Glu 1095	gac Asp	ggc Gly	agc Ser	3294
gtg Val 1100	cag Gln	ctc Leu	gcc Ala	gac Asp	cac His	tac Tyr 1105	cag Gln	cag Gln	aac Asn	acc Thr	ccc Pro 1110	atc Ile	ggc Gly	gac Asp	3339
ggc Gly 1115	ccc Pro	gtg Val	ctg Leu	ctg Leu	ccc Pro	gac Asp 1120	aac Asn	cac His	tac Tyr	ctg Leu	agc Ser 1125	tac Tyr	cag Gln	tcc Ser	3384
gcc Ala 1130	ctg Leu	agc Ser	aaa Lys	gac Asp	ccc Pro	aac Asn 1135	gag Glu	aag Lys	cgc Arg	gat Asp	cac His 1140	atg Met	gtc Val	ctg Leu	3429
ctg Leu 1145	gag Glu	ttc Phe	gtg Val	acc Thr	gcc Ala	gcc Ala 1150	ggg Gly	atc Ile	act Thr	ctc Leu	ggc Gly 1155	atg Met	gac Asp	gag Glu	3474
ctg Leu 1160	tac Tyr	aag Lys	taa												3486

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<221> misc_feature

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			20					25					30		

Serial No 10-774,721.txt

Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile
35 40 45

Thr Pro Trp Arg Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr
50 55 60

Asp Tyr Phe Leu Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser
65 70 75 80

Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly
85 90 95

Thr His Phe Ser Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg
100 105 110

Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly
115 120 125

Thr Thr Phe Val Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp
130 135 140

Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe
145 150 155 160

Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn
165 170 175

Tyr Lys Val His Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser
180 185 190

Pro Leu Val Pro Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys
195 200 205

Ser Val His Glu Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys
210 215 220

Leu Asn Asp Thr Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val
225 230 235 240

Ile Phe Arg Ser Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys
245 250 255

Pro Asp Pro Pro Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn
260 265 270

Leu Lys Ile Ser Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln
275 280 285

Serial No 10-774,721.txt

Tyr Gln Val Lys Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala
290 295 300

Asp Lys Ile Val Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro
305 310 315 320

Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro
325 330 335

Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp
340 345 350

Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val
355 360 365

Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys
370 375 380

Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln
385 390 395 400

Tyr Asp Val Val Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu
405 410 415

Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys
420 425 430

Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile
435 440 445

Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys
450 455 460

Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser
465 470 475 480

Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile
485 490 495

Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser
500 505 510

Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly
515 520 525

Tyr Thr Met Trp Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser
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530

535

Pro Pro Thr Cys Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro
545 550 555 560

Ser Ser Val Lys Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile
565 570 575

Ser Trp Glu Lys Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile
580 585 590

Arg Tyr Gly Leu Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val
595 600 605

Tyr Asp Ala Lys Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys
610 615 620

Ala Val Tyr Ala Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly
625 630 635 640

Tyr Trp Ser Asn Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile
645 650 655

Lys Val Pro Met Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp
660 665 670

Thr Met Lys Lys Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met
675 680 685

Lys Asn Asp Ser Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His
690 695 700

Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys
705 710 715 720

Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala
725 730 735

Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser
740 745 750

Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro
755 760 765

Leu Asn Ser Ser Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp
770 775 780

Serial No 10-774,721.txt

Tyr Lys Leu Met Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp
 785 790 795 800
 Gly Glu Ile Lys Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr
 805 810 815
 Ile His Asp His Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr
 820 825 830
 Pro Ile Phe Met Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe
 835 840 845
 Thr Gln Asp Asp Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val
 850 855 860
 Ile Val Pro Val Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu
 865 870 875 880
 Leu Ile Ser His Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro
 885 890 895
 Asn Pro Lys Asn Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg
 900 905 910
 Thr Asp Ile Leu Asp Pro Pro Val Ala Thr Met Val Ser Lys Gly Glu
 915 920 925
 Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp
 930 935 940
 Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala
 945 950 955 960
 Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu
 965 970 975
 Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln
 980 985 990
 Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys
 995 1000 1005
 Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe
 1010 1015 1020
 Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu
 1025 1030 1035

Serial No 10-774,721.txt

Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe
1040 1045 1050

Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr
1055 1060 1065

Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
1070 1075 1080

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
1085 1090 1095

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp
1100 1105 1110

Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser
1115 1120 1125

Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu
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Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu
1145 1150 1155

Leu Tyr Lys
1160

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Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile
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gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa 96
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Gly	Leu	Met	Phe	Leu	Met	Leu	Gly	Cys	Ala	Leu	Pro	Ile	Tyr	Asn	Lys	
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tac	tgg	ccc	ctc	ttt	gtt	cta	ttt	ttt	tac	atc	ctt	tca	cct	att	cca	144
Tyr	Trp	Pro	Leu	Phe	Val	Leu	Phe	Phe	Tyr	Ile	Leu	Ser	Pro	Ile	Pro	
		35					40					45				
tac	tgc	ata	gca	aga	aga	tta	gtg	gat	gat	aca	gat	gct	atg	agt	aac	192
Tyr	Cys	Ile	Ala	Arg	Arg	Leu	Val	Asp	Asp	Thr	Asp	Ala	Met	Ser	Asn	
	50					55					60					
gct	tgt	aag	gaa	ctt	gcc	atc	ttt	ctt	aca	acg	ggc	att	gtc	gtg	tca	240
Ala	Cys	Lys	Glu	Leu	Ala	Ile	Phe	Leu	Thr	Thr	Gly	Ile	Val	Val	Ser	
65					70				75						80	
gct	ttt	gga	ctc	cct	att	gta	ttt	gcc	aga	gca	cat	ctg	att	gag	tgg	288
Ala	Phe	Gly	Leu	Pro	Ile	Val	Phe	Ala	Arg	Ala	His	Leu	Ile	Glu	Trp	
				85					90					95		
gga	gct	tgt	gca	ctt	gtt	ctc	aca	gga	aac	aca	gtc	atc	ttt	gca	act	336
Gly	Ala	Cys	Ala	Leu	Val	Leu	Thr	Gly	Asn	Thr	Val	Ile	Phe	Ala	Thr	
			100					105					110			
ata	cta	ggc	ttt	ttc	ttg	gtc	ttt	gga	agc	aat	gac	gac	ttc	agc	tgg	384
Ile	Leu	Gly	Phe	Phe	Leu	Val	Phe	Gly	Ser	Asn	Asp	Asp	Phe	Ser	Trp	
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cag	cag	tgg	tga													396
Gln	Gln	Trp														
		130														

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<213> Homo sapiens

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			20					25					30			
Tyr	Trp	Pro	Leu	Phe	Val	Leu	Phe	Phe	Tyr	Ile	Leu	Ser	Pro	Ile	Pro	
		35					40					45				
Tyr	Cys	Ile	Ala	Arg	Arg	Leu	Val	Asp	Asp	Thr	Asp	Ala	Met	Ser	Asn	
	50					55					60					
Ala	Cys	Lys	Glu	Leu	Ala	Ile	Phe	Leu	Thr	Thr	Gly	Ile	Val	Val	Ser	
65					70				75						80	

Serial No 10-774,721.txt

Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp
85 90 95

Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr
100 105 110

Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp
115 120 125

Gln Gln Trp
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gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa 96
Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys
20 25 30

tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca 144
Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro
35 40 45

tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac 192
Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn
50 55 60

gct tgt aag gaa ctt gcc atc ttt ctt aca acg ggc att gtc gtg tca 240

Serial No 10-774,721.txt																
Ala 65	Cys	Lys	Glu	Leu	Ala 70	Ile	Phe	Leu	Thr 75	Thr	Gly	Ile	Val	Val	Ser 80	
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gga Gly	gct Ala	tgt Cys	gca Ala 100	ctt Leu	gtt Val	ctc Leu	aca Thr	gga Gly 105	aac Asn	aca Thr	gtc Val	atc Ile	ttt Phe 110	gca Ala	act Thr	336
ata Ile	cta Leu	ggc Gly 115	ttt Phe	ttc Phe	ttg Leu	gtc Val	ttt Phe 120	gga Gly	agc Ser	aat Asn	gac Asp	gac Asp 125	ttc Phe	agc Ser	tgg Trp	384
cag Gln	cag Gln 130	tgg Trp	cga Arg	ccg Pro	gtg Val	gat Asp 135	cca Pro	ccg Pro	gct Ala	aga Arg	gcc Ala 140	acc Thr	atg Met	acc Thr	agc Ser	432
aag Lys 145	gtg Val	tac Tyr	gac Asp	ccc Pro	gag Glu 150	cag Gln	agg Arg	aag Lys	agg Arg	atg Met 155	atc Ile	acc Thr	ggc Gly	ccc Pro	cag Gln 160	480
tgg Trp	tgg Trp	gcc Ala	agg Arg	tgc Cys 165	aag Lys	cag Gln	atg Met	aac Asn	gtg Val 170	ctg Leu	gac Asp	agc Ser	ttc Phe	atc Ile 175	aac Asn	528
tac Tyr	tac Tyr	gac Asp	agc Ser 180	gag Glu	aag Lys	cac His	gcc Ala	gag Glu 185	aac Asn	gcc Ala	gtg Val	atc Ile	ttc Phe 190	ctg Leu	cac His	576
ggc Gly	aac Asn	gcc Ala 195	gct Ala	agc Ser	agc Ser	tac Tyr	ctg Leu 200	tgg Trp	agg Arg	cac His	gtg Val	gtg Val 205	ccc Pro	cac His	atc Ile	624
gag Glu	ccc Pro 210	gtg Val	gcc Ala	agg Arg	tgc Cys	atc Ile 215	atc Ile	ccc Pro	gat Asp	ctg Leu	atc Ile 220	ggc Gly	atg Met	ggc Gly	aag Lys	672
agc Ser 225	ggc Gly	aag Lys	agc Ser	ggc Gly	aac Asn 230	ggc Gly	agc Ser	tac Tyr	agg Arg	ctg Leu 235	ctg Leu	gac Asp	cac His	tac Tyr	aag Lys 240	720
tac Tyr	ctg Leu	acc Thr	gcc Ala	tgg Trp 245	ttc Phe	gag Glu	ctc Leu	ctg Leu	aac Asn 250	ctg Leu	ccc Pro	aag Lys	aag Lys	atc Ile 255	atc Ile	768
ttc Phe	gtg Val	ggc Gly	cac His 260	gac Asp	tgg Trp	ggc Gly	gcc Ala	tgc Cys 265	ctg Leu	gcc Ala	ttc Phe	cac His	tac Tyr 270	agc Ser	tac Tyr	816
gag Glu	cac His	cag Gln 275	gac Asp	aag Lys	atc Ile	aag Lys	gcc Ala 280	atc Ile	gtg Val	cac His	gcc Ala	gag Glu 285	agc Ser	gtg Val	gtg Val	864
gac Asp	gtg Val 290	atc Ile	gag Glu	agc Ser	tgg Trp	gac Asp 295	gag Glu	tgg Trp	cca Pro	gac Asp	atc Ile 300	gag Glu	gag Glu	gac Asp	atc Ile	912
gcc Ala 305	ctg Leu	atc Ile	aag Lys	agc Ser	gag Glu 310	gag Glu	ggc Gly	gag Glu	aag Lys	atg Met 315	gtg Val	ctg Leu	gag Glu	aac Asn	aac Asn 320	960

Serial No 10-774,721.txt

ttc ttc gtg gag acc atg ctg ccc agc aag atc atg aga aag ctg gag Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu 325 330 335	1008
ccc gag gag ttc gcc gcc tac ctg gag ccc ttc aag gag aag ggc gag Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu 340 345 350	1056
gtg aga aga ccc acc ctg agc tgg ccc aga gag atc ccc ctg gtg aag Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys 355 360 365	1104
ggc ggc aag ccc gac gtg gtg cag atc gtg aga aac tac aac gcc tac Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr 370 375 380	1152
ctg aga gcc agc gac gac ctg ccc aag atg ttc atc gag agc gac ccc Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro 385 390 395 400	1200
ggc ttc ttc agc aac gcc atc gtg gag ggc gcc aag aag ttc ccc aac Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn 405 410 415	1248
acc gag ttc gtg aag gtg aag ggc ctg cac ttc agc cag gag gac gcc Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala 420 425 430	1296
ccc gac gag atg ggc aag tac atc aag agc ttc gtg gag aga gtg ctg Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu 435 440 445	1344
aag aac gag cag taa Lys Asn Glu Gln 450	1359

<210> 18

<211> 452

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> MY47 LUC

<400> 18

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1 5 10 15

Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys
20 25 30

Serial No 10-774,721.txt

Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro
35 40 45

Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn
50 55 60

Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser
65 70 75 80

Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp
85 90 95

Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr
100 105 110

Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp
115 120 125

Gln Gln Trp Arg Pro Val Asp Pro Pro Ala Arg Ala Thr Met Thr Ser
130 135 140

Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln
145 150 155 160

Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn
165 170 175

Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His
180 185 190

Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile
195 200 205

Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys
210 215 220

Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys
225 230 235 240

Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile
245 250 255

Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser Tyr
260 265 270

Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val
275 280 285

Serial No 10-774,721.txt

Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile
290 295 300

Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn
305 310 315 320

Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu
325 330 335

Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu
340 345 350

Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys
355 360 365

Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr
370 375 380

Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro
385 390 395 400

Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn
405 410 415

Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala
420 425 430

Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu
435 440 445

Lys Asn Glu Gln
450

<210> 19

<211> 1140

<212> DNA

<213> Artificial Sequence

<220>

<223> MY047 YFP

<220>

<221> misc_feature

Serial No 10-774,721.txt

<223> MY47 YFP

<220>

<221> CDS

<222> (1)..(1140)

<223>

<400> 19

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Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile	
1 5 10 15	
gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa	96
Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys	
20 25 30	
tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca	144
Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro	
35 40 45	
tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac	192
Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn	
50 55 60	
gct tgt aag gaa ctt gcc atc ttt ctt aca acg ggc att gtc gtg tca	240
Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser	
65 70 75 80	
gct ttt gga ctc cct att gta ttt gcc aga gca cat ctg att gag tgg	288
Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp	
85 90 95	
gga gct tgt gca ctt gtt ctc aca gga aac aca gtc atc ttt gca act	336
Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr	
100 105 110	
ata cta ggc ttt ttc ttg gtc ttt gga agc aat gac gac ttc agc tgg	384
Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp	
115 120 125	
cag cag tgg cga ccg gtg gat cca ccg gtc gcc acc atg gtg agc aag	432
Gln Gln Trp Arg Pro Val Asp Pro Pro Val Ala Thr Met Val Ser Lys	
130 135 140	
ggc gag gag ctg ttc acc ggg gtg gtg ccc atc ctg gtc gag ctg gac	480
Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp	
145 150 155 160	
ggc gac gta aac ggc cac aag ttc agc gtg tcc ggc gag ggc gag ggc	528
Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly	
165 170 175	
gat gcc acc tac ggc aag ctg acc ctg aag ttc atc tgc acc acc ggc	576
Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly	
180 185 190	

Serial No 10-774,721.txt

aag Lys	ctg Leu	ccc Pro 195	gtg Val	ccc Pro	tgg Trp	ccc Pro	acc Thr 200	ctc Leu	gtg Val	acc Thr	acc Thr	ttc Phe 205	ggc Gly	tac Tyr	ggc Gly	624
gtg Val	cag Gln 210	tgc Cys	ttc Phe	gcc Ala	cgc Arg	tac Tyr 215	ccc Pro	gac Asp	cac His	atg Met	cgc Arg 220	cag Gln	cac His	gac Asp	ttc Phe	672
ttc Phe 225	aag Lys	tcc Ser	gcc Ala	atg Met	ccc Pro 230	gaa Glu	ggc Gly	tac Tyr	gtc Val	cag Gln 235	gag Glu	cgc Arg	acc Thr	atc Ile	ttc Phe 240	720
ttc Phe	aag Lys	gac Asp	gac Asp	ggc Gly 245	aac Asn	tac Tyr	aag Lys	acc Thr	cgc Arg 250	gcc Ala	gag Glu	gtg Val	aag Lys	ttc Phe 255	gag Glu	768
ggc Gly	gac Asp	acc Thr	ctg Leu 260	gtg Val	aac Asn	cgc Arg	atc Ile	gag Glu 265	ctg Leu	aag Lys	ggc Gly	atc Ile	gac Asp 270	ttc Phe	aag Lys	816
gag Glu	gac Asp	ggc Gly 275	aac Asn	atc Ile	ctg Leu	ggg Gly	cac His 280	aag Lys	ctg Leu	gag Glu	tac Tyr	aac Asn 285	tac Tyr	aac Asn	agc Ser	864
cac His	aac Asn 290	gtc Val	tat Tyr	atc Ile	atg Met	gcc Ala 295	gac Asp	aag Lys	cag Gln	aag Lys	aac Asn 300	ggc Gly	atc Ile	aag Lys	gtg Val	912
aac Asn 305	ttc Phe	aag Lys	atc Ile	cgc Arg	cac His 310	aac Asn	atc Ile	gag Glu	gac Asp	ggc Gly 315	agc Ser	gtg Val	cag Gln	ctc Leu	gcc Ala 320	960
gac Asp	cac His	tac Tyr	cag Gln	cag Gln 325	aac Asn	acc Thr	ccc Pro	atc Ile	ggc Gly 330	gac Asp	ggc Gly	ccc Pro	gtg Val	ctg Leu 335	ctg Leu	1008
ccc Pro	gac Asp	aac Asn	cac His 340	tac Tyr	ctg Leu	agc Ser	tac Tyr	cag Gln 345	tcc Ser	gcc Ala	ctg Leu	agc Ser	aaa Lys 350	gac Asp	ccc Pro	1056
aac Asn	gag Glu	aag Lys 355	cgc Arg	gat Asp	cac His	atg Met	gtc Val 360	ctg Leu	ctg Leu	gag Glu	ttc Phe	gtg Val 365	acc Thr	gcc Ala	gcc Ala	1104
ggg Gly	atc Ile 370	act Thr	ctc Leu	ggc Gly	atg Met	gac Asp 375	gag Glu	ctg Leu	tac Tyr	aag Lys	taa					1140

<210> 20

<211> 379

<212> PRT

<213> Artificial Sequence

<220>

<223> MY047 YFP

Serial No 10-774,721.txt

<220>

<221> misc_feature

<223> MY47 YFP

<400> 20

Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile
1 5 10 15

Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys
20 25 30

Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro
35 40 45

Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn
50 55 60

Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser
65 70 75 80

Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp
85 90 95

Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr
100 105 110

Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp
115 120 125

Gln Gln Trp Arg Pro Val Asp Pro Pro Val Ala Thr Met Val Ser Lys
130 135 140

Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp
145 150 155 160

Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly
165 170 175

Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly
180 185 190

Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly
195 200 205

Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe
210 215 220

Serial No 10-774,721.txt

Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe
225 230 235 240

Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu
245 250 255

Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys
260 265 270

Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser
275 280 285

His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val
290 295 300

Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala
305 310 315 320

Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu
325 330 335

Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro
340 345 350

Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala
355 360 365

Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys
370 375

<210> 21

<211> 1114

<212> DNA

<213> Homo sapiens

<400> 21

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ttcgggagac atggcgggcg ttaaagctct cgtggcatta tccttcagtg gggctattgg 120

actgactttt cttatgctgg gatgtgcctt agaggattat ggcgtttact ggcccttatt 180

cgtcctgatt ttccacgcca tctcccccat ccccatcttc attgccaaaa gagtcaccta 240

tgactcagat gcaaccagta gtgcctgtcg ggaactggca tatttcttca ctactggaat 300

tgttgtttct gcctttggat ttctgttat tcttgctcgt gtggctgtga tcaaattggg 360

Serial No 10-774,721.txt

agcctgcggc cttgtgttgg caggcaatgc agtcattttc cttacaattc aagggttttt	420
ccttatatatt ggaagaggag atgatttttag ctgggagcag tggtagcact ttattctgat	480
tacagtgcac tgaatttcct agaactcata ctatctgtat acatgtgcac atgcggcatt	540
ttactatgaa atttaatatg ctgggttttt taataccttt atatatcatg ttcactttaa	600
gaaagacttc ataagtagga gatgagtttt attctcagca aatagacctg tcaaatttag	660
attatgttac tcaaattatg ttacttgttt ggctgttcat gtagtcacgg tgctctcaga	720
aaatatatta acgcagtctt gtaggcagct gccaccttat gcagtgcac gaaacctttt	780
gcttggggat gtgcttgagg aggcagataa cgctgaagca ggcctctcat gacctcaggaa	840
ggccgggggtg gatccctctt tgtgtttag tccatgctat taaaagtgtg gcccacagac	900
caagagcctc aacatttcct agagccttat tagaaatgca gaatctgaag cccactctg	960
gacctcaggac attttgatga gatccaaagg agttgtatgc acatgaaagt ttgagaagca	1020
tcatcataga gaagtaaaca tcacaccaa cttccttatc tttccagtgg ctaaaccact	1080
taacctctct ggggtgttacc tgctcatttg tttta	1114

<210> 22

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS01

<400> 22

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<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS02

<400> 23

gccatgtctc ccgaactggg	20
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<210> 24

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS03

<400> 24

aacgcccgcc atgtctcccg

20

<210> 25

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS04

<400> 25

agagctttaa cgcccgccat

20

<210> 26

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS05

<400> 26

ggataatgcc acgagagctt

20

<210> 27

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS06

<400> 27

aaggcacatc ccagcataag

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<210> 28

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> AS07

<400> 28

ccataatcct ctaaggcaca

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<210> 29

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> AS08

<400> 29

cagtaaacgc cataatcctc

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<210> 30

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<212> DNA

<213> Artificial Sequence

<220>

<223> AS09

<400> 30

aataagggcc agtaaagccc

20

Serial No 10-774,721.txt

<210> 31
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> AS10

<400> 31
atgccagttc ccgacaggca 20

<210> 32
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> AS11

<400> 32
aaatatgccca gttcccgaca gg 22

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> AS12

<400> 33
aagaaatatg ccagttcccg 20

<210> 34
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> AS13

<400> 34

cattgcctgc caacacaagg

20

<210> 35

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> AS15

<400> 35

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<210> 36

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> AS16

<400> 36

aaatctgcac gttacagcca gg

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<210> 37

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 37

gugccugucg ggaacuggct t

21

<210> 38

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 38

gccaguuccc gacaggcact t

21

<210> 39

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 39

tctcttgaat gaaacacatg tgcacacaca aacaaggc

38

<210> 40

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 40

gctctagaaa aatgtgtgca catgtgtttc atctcttgaa

40

<210> 41

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 41

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<210> 42

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 42

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47

<210> 43

<211> 14

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 43

ccgtggcagg aagc

14

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial

<400> 44

gcagcgacag ccccagctcc

20

Serial No 10-774,721.txt

<210> 45
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial

<400> 45
cagccacacg agcaag

16

<210> 46
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial

<400> 46
ggagaaggct ggggc

15

<210> 47
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial

<400> 47
gatggcatgg actgtgg

17

<210> 48
<211> 131
<212> PRT
<213> Homo sapiens

Serial No 10-774,721.txt

<400> 48

Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile
1 5 10 15

Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys
20 25 30

Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro
35 40 45

Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn
50 55 60

Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser
65 70 75 80

Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp
85 90 95

Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr
100 105 110

Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Lys Asp Asp Phe Ser Trp
115 120 125

Gln Gln Trp
130